

IN THE CLAIMS:

Please amend claim 26, as shown below in the detailed listing of all claims which are, or were, in this application:

Claims 1-25 (Canceled).

26. (Currently amended) A nanoparticle, useful for ligand binding bioaffinity assays, comprising a self-assembling shell built up of several protein and/or peptide subunits, which protein and/or peptide subunits can be of one or several different types, assembled to form the shell having an inner surface facing the inside and an outer surface facing the outside of said particle, wherein

a) one or several of the types of subunits have one or several genetically fused first binding moieties per type of subunit with the binding moiety facing the outside of the particle for binding of any specific ligand binding protein; and

b) i) the particle contains within its shell a marker selected from the group consisting of an enzyme, luminescent protein, a fluorescent or colored protein or organic molecule, and a rare earth metal and/or

ii) one or several of the types of subunits have one or several genetically fused second binding moieties per type of subunit with the binding moiety facing the inside and/or the outside of the particle binding a marker selected from the group consisting of an enzyme, luminescent protein, a fluorescent or colored protein or organic molecule, and a rare earth metal; and
c) the marker or markers enable detection of the particle;
and wherein the shell of the nanoparticle is a recombinant apoferritin particle or a recombinant Dpr protein particle or recombinant Dps protein particle,

wherein each fusion protein comprising a given type of ferritin subunit and a first binding moiety has an identical fusion site located at the same position in the subunit's polypeptide chain.

27. (Previously presented) The nanoparticle of claim 26, wherein first binding moieties are fused to the N-terminus of the apoferritin or Dpr or Dps protein.

28. (Previously presented) The nanoparticle of claim 26, wherein the first binding moieties are selected from the group consisting

of monoclonal antibodies, polypeptides, receptors, recombinant antibodies or antibody fragments, aptamers, engineered proteins, and derivatives thereof.

29. (Previously presented) The nanoparticle of claim 28, wherein the marker is a protein.

30. (Previously presented) The nanoparticle of claim 26, wherein the marker is a lanthanide.

31. (Previously presented) The nanoparticle of claim 26, wherein one or several of the types of subunits have one or several third genetically fused binding moieties per type of subunit with the binding moiety facing the outside of the particle for binding to a solid support.

32. (Previously presented) The nanoparticle of claim 28, wherein a first binding moiety is selected from the group consisting of protein A, protein G, protein L, calmodulin binding peptide (CBP) and biotin carboxyl carrier protein (BCCP).

33. (Previously presented) The nanoparticle of claim 28, wherein a first binding moiety is an antibody against one of members of the group consisting of CRP, ABO blood group antigens and TSH.

34. (Previously presented) The nanoparticle of claim 26, wherein a second binding moiety is a binding moiety selected from the group consisting of protein A, protein G, protein L, calmodulin binding protein (CBP) and biotin carboxyl carrier protein (BCCP).

35. (Previously presented) The nanoparticle of claim 26, wherein a second binding moiety is an antibody against one of the group consisting of CRP, ABO blood group antigens and TSH.

36. (Previously presented) The nanoparticle of claim 26, wherein the radius of the nanoparticle is from 10 to 40 nm.

37. (Previously presented) The nanoparticle of claims 26, wherein the number of subunits is more than 8.

38. (Previously presented) Kit for a ligand binding immunoassay comprising the nanoparticle according to claim 26.